Claims

1. Method for operating an internal combustion engine (1), especially of a motor vehicle, wherein fuel is directed into a combustion chamber (4) and is there combusted, characterized in that a conclusion is drawn as to deposits in the combustion chamber (4) from monitoring the effects of a cylinder equalization and/or from a misfire detection; and, then measures are initiated for cleansing the combustion chamber (4).

2. Method of claim 1 in combination with a direct-injecting internal combustion engine (1), wherein fuel is injected directly into the combustion chambers (4) of the engine (1) with the aid of injection valves (8) in a first operating mode during an induction phase or in a second operating mode during a compression phase and, a cylinder equalization with monitoring of effects and/or a misfire detection is continuously carried out; characterized in that: in the presence of a fault signal of the monitoring of effects, drawing a conclusion as to coking of the injection valves or, when detecting misfires during operation of the engine (1) in a first operating mode, switching over to the second operating mode and, when no misfires occur in the second operating mode, drawing a conclusion as to deposits on the nozzles of the injection valves (8) or as a coking of the injection valves (8).

3. Method of claims 1 or 2, characterized in that a knocking combustion is initiated for cleansing the combustion chamber (4) and/or a cleansing liquid is added to the inducted combustion air.

4. Method of claim 3, characterized in that water is used as a cleansing liquid.

5. Method of claims 1 or 3, characterized in that the measures for cleansing the combustion chamber (4) are carried out for a predetermined time duration.

6. Method of claims 1 or 3, characterized in that the measures for cleansing the combustion chamber (4) are carried out so long until no deposits are no longer detected in the combustion chamber (4).

7. Method of claims 5 or 6, characterized in that the measures for cleansing the combustion chamber (4), especially the knocking combustion, are carried out only as long as no damage of the engine (1) is to be expected.

8. Method of claims 1 or 3, characterized in that the measures for cleansing the combustion chamber (4) are carried out as a precaution at predetermined time intervals for a predetermined time duration.

9. Method of claim 1 in combination with a direct-injecting engine (1) wherein fuel is injected directly into the combustion chambers (4) of the engine (1) with the aid of injection valves (8) in a first operating mode during an induction phase or in a second operating mode during a compression phase; and, wherein a misfire detection is carried out continuously, characterized in that: when detecting misfires during operation of the engine (1) in the first operating mode, then switching

over into the second operating mode and when misfires also occur in the second operating mode, drawing a conclusion as to a general fault and starting additional diagnostic methods for narrowing down the fault causes.

10. Method of at least claim 1, characterized in its use in a diesel engine.

11. Computer program having program-code means in order to carry out all steps of any desired one of claims 1 to 10 when the program is executed on a computer, especially a control apparatus.

12. Arrangement for operating an internal combustion engine (1), especially of a motor vehicle, characterized in that additional means are present which detect deposits in the combustion chamber (4) and thereupon initiating measures in a targeted manner for cleansing the combustion chamber (4).

13. Internal combustion engine (1), especially of a motor vehicle, having means for conducting fuel into a combustion chamber (4) and there combusting the fuel, characterized in that means are present with which a conclusion can be drawn as to deposits in the combustion chamber (4) via monitoring the effects of a cylinder equalization and/or via a detection of misfires and, thereafter, initiating measures in a targeted manner for cleansing the combustion chamber (4).

14. Control apparatus (16) for an internal combustion engine, especially of a motor vehicle, characterized in that means are

present for carrying out the steps of the method of at least one of the claims 1 to 10.